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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,878	11/18/2003	Masato Ito	1081.1183	3150

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EXAMINER	
LE, THI Q	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/714,878	ITO, MASATO	
	Examiner	Art Unit	
	Thi Q. Le	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/18/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment

1. The Preliminary Amendments submitted on 11/18/2003 has been considered by the Examiner and made of record in the application file.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 4** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. **Claim 4** recites the limitation "**routing tables**" in **lines 6 and 7**. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1-3, 8 and 10** are rejected under 35 U.S.C. 102(b) as being anticipated by **Suzuki (US PGPub 2002/0005967)**.

Consider **claim 1**, Suzuki et al. clearly shows and discloses, an optical transmission network system having a plurality of nodes for transit transmission of a wavelength-division-multiplexed optical signal (See figure 2), a transmission route applicability inspection system (read as, network management device; figure 2) for inspecting the applicability of a route being set through one or more nodes among the plurality of nodes, the transmission route applicability inspection system comprising (abstract): a test signal transmission unit (read as, optical transmission device 3; figure 2) transmitting an optical test signal (read as, evaluation signals; paragraph 0118) from one end of a route along the route; a test signal reception unit (read as, optical receiving device, 4; figure 2) receiving, in the other end of the route, the optical test signal transmitted along the route (figure 2; paragraphs 0048-0059 and 0118); a parameter extraction unit (read as, optical receiving cards 32-1 to 32-n; paragraph 0119) obtaining a transmission parameter (read as, transmission quality information; paragraph 0119) representing a transmission characteristic of the optical test signal received in the test signal reception unit (figures 6 and 8; paragraphs 0119) ; and a route applicability inspection unit (read as, rout evaluation unit, 41b; figure 7) inspecting applicability of the route based on the transmission parameter extracted in the parameter extraction unit (figure 7; paragraph 0098).

Consider **claim 2, and as applied to claim 1 above**, Suzuki further disclose, wherein the test signal transmission unit is provided in first line terminal equipment (read as, optical transmission device, 3; figure 2) disposed on one end of the route in the optical transmission network system (figure 2; paragraph 0048), the test signal reception unit and the parameter extraction unit are provided in second line terminal equipment (read as, optical receiving device, 4; figure 2) disposed on the other end of the route in the optical transmission network system

(figure 6; paragraph 0119), and the route applicability inspection unit is provided in a network monitoring system (read as, network management device, 6; figure 2) monitoring the optical transmission network system (figures7 and 8; paragraphs 0090-0100 and 0119).

Consider **claim 3, and as applied to claim 1 above**, Suzuki further disclose, wherein the test signal transmission unit is provided in the first line terminal equipment disposed on one end of the route in the optical transmission network system (figure 2; paragraph 0048), the test signal reception unit, the parameter extraction unit, and the route applicability inspection unit (read as, optical receiving cards 32-1 to 32-n; paragraph 0119) are respectively provided in the second line terminal equipment (read as, optical receiving device, 4; figure 2) disposed on the other end of the route in the optical transmission network system, and the route applicability inspection unit transmits the inspection result (read as, the control signal processing unit, 35, notifies the network management device, 6, of the evaluation information of the optimal optical paths; paragraph 0119) to the network monitoring system monitoring the optical transmission network system (figures 6 and 8; paragraphs 0086-0087 and 0119).

Consider **claim 8**, Suzuki clearly shows and discloses, an optical transmission network system having first line terminal equipment (read as, optical transmission device, 3; figure 2) and second line terminal equipment (read as, optical receiving device, 4; figure 2) transmitting and receiving a wavelength division-multiplexed optical signal (see figure 2), and a plurality of nodes for transit transmission of said optical signal, a transmission route applicability inspection system for inspecting route applicability of a route being set from the first line terminal equipment to the second line terminal equipment through one or more nodes among the plurality of nodes, the transmission route applicability inspection system comprising: a storage unit (read as,

information storage unit, 40; figure 7) storing transmission parameters representing transmission characteristics of sections between each neighboring pair among the first line terminal equipment, the second line terminal equipment and the plurality of nodes (figure 7; paragraph 0092)); and a route applicability inspection unit (read as, optical route selection means, 41; figure 7) reading out the transmission parameters of the sections constituting the route, and inspecting the route applicability based on the readout transmission parameters (figure 7; paragraph 0098).

Consider **claim 10, and as applied to claim 8 above**, Suzuki further disclose, wherein the storage unit and the route applicability inspection unit are provided in a network monitoring system monitoring the optical transmission network system (figure 7; paragraphs 0090-0100).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. **Claims 4 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Suzuki (US PGPub 2002/0005967)** in view of **Wang (US PGPub 2003/0161632).**

Consider **claims 4 and 12, and as applied to claims 1 and 8, respectively, above,** Suzuki disclose the invention as described above; except for, a frame transmission unit transmitting a route search frame for searching the route from one end of the route to the other end of said route in the form of an optical signal; a frame reception unit receiving, on the other end of the route, the route search frame having been routed through one or more nodes among the plurality of nodes based on routing tables respectively provided in the plurality of nodes; and a route setting unit setting the route based on the nodes through which the route search frame received in the frame reception unit was transmitted.

In related art, Wang discloses, an optical switch nodes and the protocol for establishing a data connection between terminal switching nodes in the network. Wherein, the method of establishing an end-to-end connection between a source node (read as, frame transmission unit) and a destination node (read as, frame reception unit) involves (paragraph 0088): the source node generates an INITIAL_CONNECTION_REQUEST message (read as, route search frame) to start the process of searching the transmission route and establishing the connection (paragraph 0088). The message is transmitted from node to node in the form of a CONNECTION_REQUEST message rather than the INITIAL_CONNECTION_REQUEST message (paragraph 0090). Also each node has the function of using the routing table stored in its memory to find the appropriate route for forwarding the CONNECTION_REQUEST message to the next node (paragraph 0090-0092). Once, the CONNECTION_REQUEST message reaches the destination node, the controllers, 490, provides appropriate mapping instruction to the optical switch fabric, 492, so that a data path connection is establish between the source node and the destination node (figures 1, 3 and 6; paragraphs 0070-0078 and 0088-0098).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teaching of Wang with Suzuki. Since function of finding transmission path from a routing table is distributed among the nodes in the network, reduce the processing require for a central network management device. Also transmitting CONNECTION_REQUEST message allow local nodes within the network to extract data from the message and perform routing more accurately.

11. **Claims 5 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Suzuki (US PGPub 2002/0005967)** in view of **Wang (US PGPub 2003/0161632)** and in further view of **Au et al. (US Patent # 7,110,670)**.

Consider **claims 5 and 13, and as applied to claims 4 and 12, respectively, above**, Suzuki as modified by Wang disclose an INITIAL_CONNECTION_REQUEST message transmission process (note, a person of ordinary skill in the art would know that a transmitting unit is required, although not discussed, for transmitting the message) at a source node (read as, first line terminal) and the message is terminated at the destination node (read as, second line terminal). But fails to disclose the route setting unit is provided in the network monitoring system monitoring the optical transmission network system.

In related art, Au et al. disclose a system and method for selecting optimum transmission path within the network (abstract). The system includes a plurality of switches and access nodes and central servers (figure 1). Wherein, the central servers (read as route setting unit), stores information regarding network characteristic and topology; and also controlling the switches and establishing transmission route according to the information stored (column 2 lines 10-29). Au et al. also disclose that such centralized server system can implement as a distributed system,

whereby the functions of the central servers are distributed among the switches (figure 1; column 3 lines 9-17 and lines 50-60).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teaching of Au et al. with Suzuki as modified by Wang. Because having a centralized server have the advantages of easy physical access for updating/repairing the server. Since the components are located in one location, updating/repairing the components can be done faster.

12. **Claims 6-7 and 14-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Suzuki (US PGPub 2002/0005967)** in view of **Passman et al. (US Patent # 6,671,819).**

Consider **claims 6 and 14, and as applied to claims 1 and 8, respectively, above,** Suzuki discloses a network management device comprising: an information storage means, for storing transmission quality information, transmission network configuration (read as, routing table), defect information and route usage status; and an optimal route selection means, for searching available routes and evaluating the available route (figure 7; paragraphs 0097-0100). Suzuki fails to disclose a system where the information storage unit is distributed in each node within the system.

In related art, Passman et al. disclose a network with multiple nodes and a method for routing packets in the network. Wherein, each node is connected to each other through an optical fiber line; and has an I/O interface, switching fabric, controller and a database (figures 1 and 2). The I/O interface receives and transmits the data packets, the switching fabric allows for switching the optical signal, the controller for controlling the operation of the node, and the database for storing information such as, the topology of the network and the forwarding table

(read as, routing table) (figures 2 and 3). When a packet is received at a node, the node analyzes the packet, use the forwarding table to route the packet to the next node (column 3 lines 45-58). When the packet arrived at the destination node, the node analyzes the packet and determined that the packet no long needs to be forwarded to the next node (figures 1-4; column 2 lines 64-67; column 3 lines 1-67 and column 4 lines 1-34).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teaching of Passman et al. with Suzuki. When a central management node is use to process the route selection and controlling the nodes for routing, a powerful processor is needed; while distributing some of the functions of the central management nodes among the individuals nodes within the network, allow the central management node to process other data. Thus, making data transmission and processing faster. Further, Au et al. disclosed a centralized server system could also be implemented as a distributed system whereby the functions are distributed among the nodes in the network, as discussed above.

Consider **claims 7 and 15, and as applied to claims 6 and 14, respectively, above**, Suzuki as modified by Passman et al. further discloses, as discussed above, the information storage means, for storing transmission quality information, transmission network configuration (read as, routing table), defect information and route usage status; and the optimal route selection means, for searching available routes and evaluating the available route, are provided within the network management device (figure 7; paragraphs 0097-0100).

13. **Claims 9, 11, 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Suzuki (US PGPub 2002/0005967)** in view of **Au et al. (US Patent # 7,110,670)**.

Consider **claim 9, and as applied to claim 8 above,** Suzuki discloses an optical transmission system, wherein a centralized network management device, determined and select the optimum route for transmission of the wavelength multiplexed signal from one end to another. Wherein, the network management device has an information storage means, for storing transmission quality information, transmission network configuration, defect information and route usage status; and an optimal route selection means, for searching available routes and evaluating (read as, route applicability inspection unit) the available route (figure 7; paragraphs 0097-0100). Suzuki fails to disclose a network system, whereby the information storage unit is distributed among the nodes in the network.

In related art, Au et al. disclose a system and method for selecting optimum transmission path within the network. The system includes a plurality of switches and access nodes and central servers. Wherein, each node utilizes wavelength routing protocol and wavelength distribution protocol to exchange information on the characteristic of the nodes connected with it; thus building up a network topology (column 2 lines 10-29). The information is then forwarded to the central server for storage; and it also controls the switches and establishes transmission route according to the information stored (column 3 lines 9-17). Au et al. also disclose that such centralized server system can implement as a distributed system, whereby the functions of the central servers are distributed among the nodes (figure 1; column 3 lines 9-17 and lines 50-60).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teaching of Au et al. with Suzuki. When a central management node is use to process the route selection and controlling the nodes for routing, a powerful processor is

needed; while distributing those functions of the central management nodes among the individuals nodes within the network, allows the central management node to process other data, such evaluating each route and selecting an optimum route. Thus, making process of optimum route selection faster.

Consider **claims 11, 16 and 17, and as applied to claims 8, 9, and 10, respectively, above**, Suzuki discloses a test signal transmission unit (read as, optical transmission device 3; figure 2) transmitting a test signal (read as, evaluation signals) in the form of light to the neighboring node or the neighboring first or second line terminal equipment; a test signal reception unit (read as, optical receiving device, 4; figure 2) receiving the test signal in the form of light, transmitted from the neighboring node or the neighboring first or second line terminal equipment (figure 2; paragraphs 0048-0059 and 0118); and a parameter extraction unit (read as, optical receiving cards 32-1 to 32-n; paragraphs 0119) obtaining the transmission parameter (read, as transmission quality information; paragraph 0119) representing the transmission characteristic of the test signal received in the test signal reception unit, and supplying the obtained parameter to the storage unit (figures 6 and 8; paragraphs 0119). Suzuki fails to disclose that each node comprises the apparatus described above.

In related art, Au et al. disclose a system and method for selecting optimum transmission path within the network. The system includes a plurality of switches and access nodes and central servers. Wherein, each node utilizes wavelength routing protocol and wavelength distribution protocol to exchange information on the characteristic of the nodes connected with it; thus building up a network topology (column 2 lines 10-29). The information is then forwarded to the central server for storage; and it also controls the switches and establishes

transmission route according to the information stored (column 3 lines 9-17). Au et al. also disclose that such centralized server system can implement as a distributed system, whereby the functions of the central servers are distributed among the nodes (figure 1; column 3 lines 9-17 and lines 50-60).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teaching of Au et al. with Suzuki. When a central management node is use to process the route selection and controlling the nodes for routing, a powerful processor is needed; while distributing those functions of the central management nodes among the individuals nodes within the network, allows the central management node to process other data, such evaluating each route and selecting an optimum route. Thus, making process of optimum route selection faster.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Ishikawa et al.; 5,815,294

b) Fabre et al.; 2003/0021233

c) Smith et al.; 2003/0020977

d) Lear et al.; 2003/0099202

e) Wilson, Anthony david; 2003/0118170

f) Bharali et al.; 2003/0112809

g) Bertin et al.; 6,934,249

15. Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

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Hand-delivered responses should be brought to

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Randolph Building
401 Dulany Street
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16. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Thi Le whose telephone number is (571) 270-1104. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Thi Le
September 29, 2006

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER